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Application No. 10/538,508

Docket No. 424662011500

AMENDMENTSIn the Claims:

1. (Currently Amended) [[A]] An electrical apparatus comprising:
a motor having at least one switched phase winding having a switching frequency greater than 2kHz and configured to drive an impeller, and
a power conversion apparatus for converting power from an alternating source to dc, the power conversion apparatus comprising [[:]] :
an input stage for receiving power from the alternating source, which input stage includes an input filter,
a rectifier for rectifying the alternating signal,
a capacitor for storing energy from the rectified signal, and
an output for outputting power from the rectifier and the capacitor to the pulsed-load motor,
wherein the pulsed-load has at least one switched phase winding which receives power from the output and wherein the capacitor is configured such that the voltage across the capacitor falls below 15% of the nominal peak rectified voltage of the source during each cycle of the alternating source.
2. (Previously Presented) A power conversion apparatus according to claim 1, wherein the capacitor is configured such that the voltage across the capacitor falls below 10% of the nominal peak rectified voltage of the source during each cycle of the alternating source.
3. (Previously Presented) A power conversion apparatus according to claim 1 or 2, wherein the capacitor is configured such that the voltage across the capacitor falls below 5% of the nominal peak rectified voltage of the source during each cycle of the alternating source.

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4. (Previously Presented) A power conversion apparatus according to claim 1 or 2, wherein the capacitor is configured to store the amount of energy which is released from the winding when the winding is switched off.

5. (Previously Presented) A power conversion apparatus according to claim 1 or 2, wherein the pulsed load has a switching frequency which is greater than 2KHz.

6. (Canceled)

7. (Previously Presented) An electrical apparatus comprising a power conversion apparatus according to claim 1 or 2 and a pulsed load.

8. (Previously Presented) An electrical apparatus according to claim 7, wherein the pulsed load is an inductive load which is repeatedly switched between an on state and an off state, wherein the duration of the on state is less than the off state so as to minimize or avoid flux build up in the inductive load.

9. (Previously Presented) An electrical apparatus according to claim 7, wherein the pulsed load comprises a motor having at least one switched phase winding.

10 (Original) An electrical apparatus according to claim 9, wherein the motor is a switched reluctance motor.

11 (Previously Presented) An electrical apparatus according to claim 9, further comprising an impeller which is driven by the motor.

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12. (Previously Presented) A vacuum cleaner comprising the electrical apparatus according to claim 1 and an airflow path formed within the vacuum cleaner, wherein the impeller is a suction fan for drawing air along the airflow path.

13. (Previously Presented) An electrical apparatus according to claim 9, further comprising a surface-treating device which is driven by the motor.

14. (Original) An electrical apparatus according to claim 13, in which the surface-treating device comprises an agitator which is rotatable by the motor.

15. (Previously Presented) A vacuum cleaner comprising the electrical apparatus according to claim 14 and an airflow path formed within the vacuum cleaner, wherein the agitator is located in a cleaner head or floor tool of the vacuum cleaner.

16. (Previously Presented) An electrical apparatus according to claim 7, wherein the pulsed load is a power supply, and the switched winding comprises a transformer.

17. (Canceled)

18. (Previously Presented) An electrical apparatus according to claim 8, wherein the pulsed load comprises a motor having at least one switched phase winding.

19. (Previously Presented) An electrical apparatus according to claim 18, wherein the motor is a switched reluctance motor.

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20. (Previously Presented) An electrical apparatus according to claim 19, further comprising; an impeller which is driven by the motor.

21. (Previously Presented) An electrical apparatus according to claim 10, further comprising; a surface-treating device which is driven by the motor.

22. (Previously Presented) A vacuum cleaner comprising the electrical apparatus according to claim 14 and an airflow path formed within the vacuum cleaner, wherein the agitator is located in a cleaner head or floor tool of the vacuum cleaner and the motor is a switched reluctance motor.